GEOMETRY
Unit 5 – Worksheet 1 – Midsegment Theorem
Target A

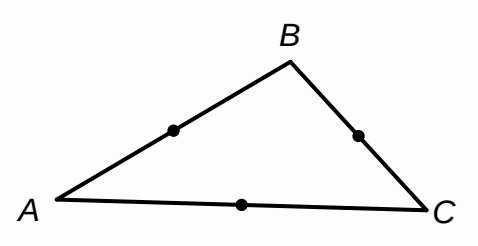
Name _____

Period _____ Date _____

1. In the triangle at the right, name the midpoints M, P, and N. Sketch in the midsegments.

   Name the midsegments:

   _____



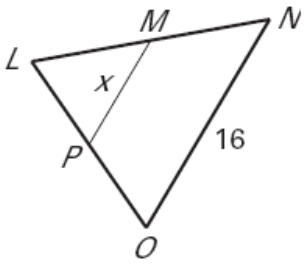
2. Use the picture that you completed to fill in the blanks.

   According to the Midsegment Theorem, $\overline{AB} \parallel$ _____ ; $\overline{BC} \parallel$ _____ ; $\overline{AC} \parallel$ _____ and $\frac{AB}{2} =$ _____ ;

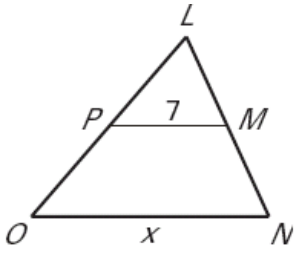
   $\frac{BC}{2} =$ _____ ; $\frac{AC}{2} =$ _____

3. Mark and name 3 pairs of congruent segments: _____; _____; _____

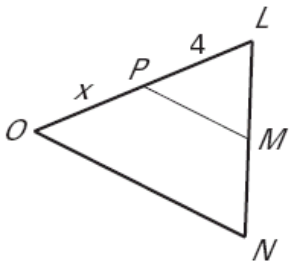
4. $\overline{MP}$ is a midsegment of $\triangle LNO$, find the value of *x*.



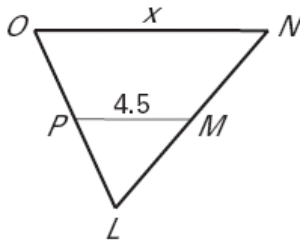
x = _____



x = _____



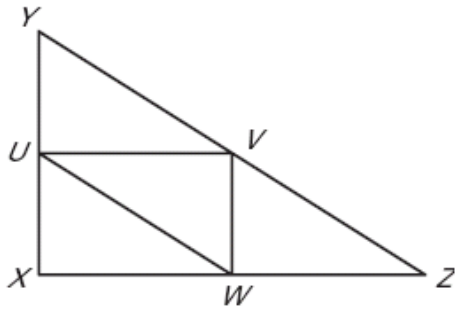
x = _____



x = _____

5. $\overline{UW}$ is a midsegment of $\triangle XYZ$. Find the value of a, UW, and YZ.

   UW = 4a – 1, YZ = 5a + 4.

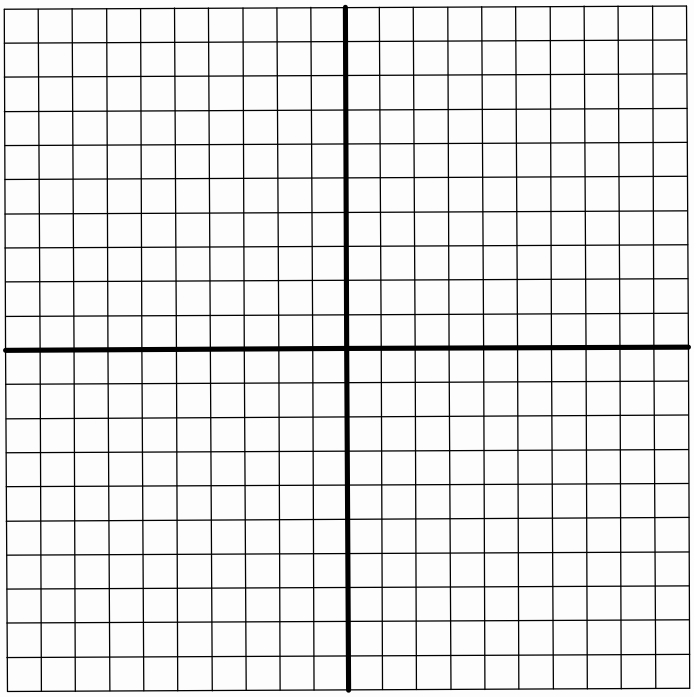


a = _____

UW = _____

YZ = _____

6. Graph and label the points P (0, 2); Q (6, 4); and R (4, -2). Connect to make $\triangle PQR$



7. Use the midpoint formula $\left(\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2}\right)$ to find the midpoints S, T, and U.

Midpoint of $\overline{PQ}$, S = _____

Midpoint of $\overline{QR}$, T = _____

Midpoint of $\overline{PR}$, U = _____

Graph your midpoints. Do they seem to be in the middle of the segment? If not go back and check your work! Connect the midpoints to form the midsegments!

8. Use the distance formula $d = \sqrt{|x_2 - x_1|^2 + |y_2 - y_1|^2}$ to find PR and ST. Round your answers to the hundredths place.

PR = _____ ST = _____

Is the length of $\overline{PR}$ twice the length of $\overline{ST}$? If not, go back and check your work!

9. Use the slope formula $\frac{y_2 - y_1}{x_2 - x_1}$ to find the slope of $\overline{PR}$ and $\overline{ST}$.

Slope of $\overline{PR}$ _____ Slope of $\overline{ST}$ _____

Are these two slopes the same? If not go back and check your work.